

WHAT IS CLAIMED IS:

- 1 1. A method comprising the steps of:
2 processing a first voice having a first characteristic to a first level of precision using a
3 first finite impulse response filter, wherein the first level of precision is based on
4 the first characteristic;
5 processing a second voice having a second characteristic to a second level of precision
6 using a second finite impulse response filter; wherein the second level of
7 precision is based on the second characteristic; and
8 wherein a number of coefficients used by the first finite impulse response filter plus a
9 number of coefficients used by the second finite impulse response filter does not
10 exceed a predetermined maximum number of coefficients.
- 1 2. The method of Claim 1, wherein the steps of processing are used to provide localization
2 of the first voice and the second voice in three-dimensional space.
- 1 3. The method of Claim 1, wherein the first characteristic includes a first interpreted
2 distance and the second characteristic includes a second interpreted distance different
3 from the first interpreted distance.
- 1 4. The method of Claim 1, wherein the first characteristic includes a first audio type and the
2 second characteristic includes a second audio type different from the first audio type.
- 1 5. The method of Claim 1, wherein the first characteristic includes a first priority level and
2 the second characteristic includes a second priority level different from the first priority
3 level.

1 6. The method of Claim 1, further including the step of prioritizing the first voice and the
2 second voice.

1 7. The method of Claim 6, wherein the coefficients used by the finite impulse response filter
2 are determined using a Head Related Transfer Function.

8. A method comprising the steps of:

receiving a first voice data having a first characteristic;
receiving a second voice data having a second characteristic;
assigning a first number of coefficients based on the first characteristic;
assigning a second number of coefficients based on the second characteristic.

9. The method of Claim 8, further including the steps of:

processing the first voice data using a first finite impulse response filter, wherein a
number of coefficients used by the first finite impulse response filter is equal to
the first number of coefficients assigned to the first voice data; and
processing the second voice data using a second finite impulse response filter, wherein a
number of coefficients used by the second finite impulse response filter is equal to
the second number of coefficients assigned to the second voice data.

10. The method of Claim 8, wherein the first characteristic and the second characteristic are
determined prior to the step of receiving.

11. The method of Claim 8, wherein the first characteristic and the second characteristic are
determined subsequent to the step of receiving.

12. The method of Claim 8, wherein the first characteristic includes a first interpreted
distance and the second characteristic includes a second interpreted distance different
from the first interpreted distance.

13. The method of Claim 8, wherein the first characteristic includes a first audio type and the
second characteristic includes a second audio type different from the first audio type.

- 1 14. The method of Claim 8, wherein the first characteristic includes a first priority level and
2 the second characteristic includes a second priority level different from the first priority
3 level.

1 15. A method comprising the steps of:
2 assigning a first number of coefficients to a first voice having a first characteristic,
3 wherein first number of coefficients is based on the first characteristic;
4 assigning a second number of coefficients to a second voice having a second
5 characteristic, wherein first number of coefficients is based on the first
6 characteristic, and where the sum of the first number of coefficients and the
7 second number of coefficients are no more than a predetermined fixed number of
8 coefficients;
9 applying a first Head Related Transfer Function to the first voice, the first Head Related
10 Transfer Function using a number of coefficients equal to the first number of
11 coefficients assigned to the first voice; and
12 applying a second Head Related Transfer Function to the second , the second Head
13 Related Transfer Function using a number of coefficients equal to the second
14 number of coefficients assigned to the second voice.

1 16. The method of Claim 15, further including the steps of:
2 determining the first characteristic of the first voice; and
3 determining the second characteristic of the second voice.

1 17. The method of Claim 15, wherein the first characteristic and the second characteristic are
2 determined prior to the step of receiving.

1 18. The method of Claim 15, wherein the first characteristic and the second characteristic are
2 determined subsequent to the step of receiving.

1 19. The method of Claim 15, wherein the first characteristic includes a first interpreted
2 distance and the second characteristic includes a second interpreted distance different
3 from the first interpreted distance.

- 1 20. The method of Claim 15, wherein the first characteristic includes a first audio type and
2 the second characteristic includes a second audio type different from the first audio type.
- 1 21. The method of Claim 15, wherein the first characteristic includes a first priority level and
2 the second characteristic includes a second priority level different from the first priority
3 level.
- 1 22. The method of Claim 15, wherein the steps of applying a Head Related Transfer Function
2 are used to provide localization of sound in three-dimensional space.

1 23. A method comprising the step of:
2 receiving a plurality of voices, wherein the plurality of voices is representative of a
3 plurality of sound sources;
4 distributing a fixed number of coefficients among the plurality of voices, wherein a
5 number of coefficients assigned to a voice is based on a priority associated with
6 the voice; and
7 applying a Head Related Transfer Function to each voice of the plurality of voices using
8 a finite impulse response filter, wherein the number of coefficients used by the
9 finite impulse response filter to filter a voice is based on a number of the fixed
10 number of coefficients distributed to the voice.

1 24. The method of Claim 23, wherein the priority associated with a voice is determined prior
2 to the step of receiving.

1 25. The method of Claim 23, wherein the priority associated with a voice is determined
2 subsequent to the step of receiving.

1 26. The method of Claim 23, wherein the priority associated with a voice is based on an
2 interpreted distance of the voice.

1 27. The method of Claim 23, wherein the priority associated with a voice is based on an
2 audio type of the voice.

1 28. The method of Claim 23, wherein the step of applying a Head Related Transfer Function
2 is used to provide localization of sound in three-dimensional space.

- 1 29. The method of Claim 23, wherein the step of distributing a fixed number of coefficients
2 includes the steps of:
3 assigning a number of the fixed number of coefficients each subgroup of a plurality of
4 subgroups;
5 associating each of the plurality of voices with one of the plurality of subgroups;
6 distributing, for each subgroup of the plurality of subgroups, the number of coefficients
7 assigned to the subgroup among the voices associated with the subgroup.

1 30. A device comprising:
2 a processor;
3 memory operably coupled to said processor; and
4 a program of instructions capable of being stored in said memory and executed by said
5 processor, said program of instructions to manipulate said processor to:
6 receive a first voice data having a first characteristic;
7 receive a second voice data having a second characteristic;
8 assign a first number of coefficients based on the first characteristic;
9 assign a second number of coefficients based on the second characteristic.

1 31. The device of Claim 30, said program of instructions further including instructions to
2 manipulate a processor to:
3 process the first voice data using a first finite impulse response filter, wherein a number
4 of coefficients used by the first finite impulse response filter is equal to the first
5 number of coefficients assigned to the first voice data; and
6 process the second voice data using a second finite impulse response filter, wherein a
7 number of coefficients used by the second finite impulse response filter is equal to
8 the second number of coefficients assigned to the second voice data.

1 32. The device of Claim 30, wherein the first characteristic and the second characteristic are
2 determined prior to receipt of the first voice data and the second voice data.

1 33. The device of Claim 30, wherein the first characteristic and the second characteristic are
2 determined subsequent to receipt of the first voice data and the second voice data.

1 34. The device of Claim 30, wherein the first characteristic includes a first interpreted
2 distance and the second characteristic includes a second interpreted distance different
3 from the first interpreted distance.

1 35. The device of Claim 30, wherein the first characteristic includes a first audio type and the
2 second characteristic includes a second audio type different from the first audio type.

1 36. The device of Claim 30, wherein the first characteristic includes a first priority level and
2 the second characteristic includes a second priority level different from the first priority
3 level.

1 37. A computer readable medium tangibly embodying a program of instructions, said
2 program of instructions including instructions to manipulate a processor to:
3 receive a first voice data having a first characteristic;
4 receive a second voice data having a second characteristic;
5 assign a first number of coefficients based on the first characteristic;
6 assign a second number of coefficients based on the second characteristic.

1 38. The computer readable medium of Claim 37, said program of instructions further
2 including instructions to manipulate a processor to:
3 process the first voice data using a first finite impulse response filter, wherein a number
4 of coefficients used by the first finite impulse response filter is equal to the first
5 number of coefficients assigned to the first voice data; and
6 process the second voice data using a second finite impulse response filter, wherein a
7 number of coefficients used by the second finite impulse response filter is equal to
8 the second number of coefficients assigned to the second voice data.

1 39. The computer readable medium of Claim 37, wherein the first characteristic and the
2 second characteristic are determined prior to receipt of the first voice data and the second
3 voice data.

1 40. The computer readable medium of Claim 37, wherein the first characteristic and the
2 second characteristic are determined subsequent to receipt of the first voice data and the
3 second voice data.

1 41. The computer readable medium of Claim 37, wherein the first characteristic includes a
2 first interpreted distance and the second characteristic includes a second interpreted
3 distance different from the first interpreted distance.

1 42. The computer readable medium of Claim 37, wherein the first characteristic includes a
2 first audio type and the second characteristic includes a second audio type different from
3 the first audio type.

1 43. The computer readable medium of Claim 37, wherein the first characteristic includes a
2 first priority level and the second characteristic includes a second priority level different
3 from the first priority level.